Prosodic Patterns in the Performance of Grindmill Songs

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Prosodic patterns and rhetorics in the performance of grindmill songs[1]

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Abstract

Experimental studies of reading and spontaneous speech analysis have brought into light the role of tonal patterns (an aspect of speech prosody) in conveying rhetoric aspects of verbal communication hitherto overlooked by classical linguistic analysis. Speakers tend to rely on tonal patterns — basically excursions of the fundamental pitch "F0" — to make their message "known", "believed", and to instil a subjective dimension into it.
It makes sense to hypothesise that similar strategies might be worked out by singers when the focus of their performance is a subjective reinterpretation of textual and symbolic contents of the lyrics. To check this hypothesis, we are in the process of conducting a detailed analysis of Maharashtrian grindmill songs recorded with individual performers. In the absence of a system of codification for tunes and lyrics, these performers feel free to explore melodic (tonal/temporal) structures emphasising the meaning of words, or conveying additional meanings that the core lyrics did not articulate. The latter is part of an individuation process that would otherwise be difficult to trace in group performance.

In the context of drastic transformations occurring in rural areas of Maharashtra, we are addressing specific forms of expression and communication peculiar to women which prove significant in different respects.

The remarkable wealth of grindmill songs is one of these forms. First, it displays a characteristic continuity between 'traditional' and 'modern' thought processes and modes of expression. Secondly, it aims at establishing bonds between individuals and groups. Our main concern is to capture the motivations of performers and their patterns of communication in this particular context.

The abilities to create, modify and perform these songs, and to transmit their impressive repertory throughout generations, are the components of an autonomous system of knowledge within communities of women. Peasant women in Maharashtra often refer to grindmill songs as "their Veda" in contrast with the highbrow culture carried over by men with the support and legitimisation of writing.

Documentary work indicates that to a large extent the tradition of grindmill songs crosses the conventional boundaries of family, village, cast and religion. Thus, it functions as a "women heritage", although not a static, "feminist" set of essentialist world views, rather a touchstone for

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understanding the psychological motivations and the social constraints of its performers.

The first principle underlying our methodology is that the keys for "deciphering" the musical and textual content may reside in the performance itself — which includes extralinguistic and extramusical features such as gestures and situation/status of the speaker or singer. It follows a recent methodological trend in French linguistics, namely instructional semantics (*sémantique instructionnelle*) in contrast with the classical approach of componential semantics (*sémantique componentielle*) (Kleiber 1994). Ours may also be called a "post-Heideggerian hermeneutics approach" whereby the "art of understanding" belongs to the musical work itself as much as to its performers and appreciative audience (Vecchione 1997:101). Besides, the notions of "performer" and "audience" do not make much sense in the context of singing at the grindmill… The second principle is that a musical work (here, a particular performance) may be approached as a narrative, a "fiction story" whose reference is more sophisticated than the ones of scientific discourse or mundane speech communication.

> This fiction takes its form thanks to a discourse that the individual musical work casts to audiences by producing itself as the figuration of a possible world and projecting itself as an "act of speech" whose discursive type (figuration, narration, argumentation) is predetermined. As a speech, as a quasi-speech, the musical work is designed for audiences for some reasons; as a quasi-text, it configures itself, for the requirements of that "act of speech"; as a discourse, finally, it aims at optimising the effect of its destination by fixing its own modes of text arrangement.[2]
> (Vecchione, op.cit.:102)

The discursive dimension of a musical work rarely lends itself to a straightforward deciphering — not even in cases, such as Western opera, when the lyrics is narrative. In other words, whereas the languages of science, literature, theatre or cinema lend themselves to specific rhetoric types such as reasoning, narration, drama, etc., music might call for a more sophisticated analysis yielding insights into that sort of "multivocal discursivity" in which its argumentation is embedded (ibid.).

After collecting and classifying more than 50,000 *ovi* (dystichs) that constitute the textual content of these songs, we became aware that the analysis of this corpus requires an analysis of semantic and discursive contents difficult to trace (to some extent, overlooked) in ordinary situations of speech communication. For it would undoubtedly be short-sighted to reduce the syntactic/semantic effects of performed *ovi* to subforms of ordinary speech. Similarly, the fact that their musical content resists melodic and stylistic classifications does not imply that it only needs to be "straightened" to fit into a predefined musical model, notwithstanding the versatility and proclaimed universality of the model.

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[2] Original text: *Cette fiction s'informe à travers un propos que l'œuvre musicale singulière destine à des auditoires en se produisant comme figuration d'un monde possible tout en se projetant comme une "parole", qui se configure comme un "texte", dont le type discursif (figuration, narration, argumentation) est déterminé. Comme propos, comme quasi-parole, l'œuvre est destinée à des auditoires, pour des raisons; comme quasi-texte, elle se configure, pour les besoins de cette "parole"; comme discours, enfin, dans le but d'optimiser les effets de la destination, elle détermine ses propres modes d'agencements textuels.*

Our hypothesis is that the discursive structure may emerge from looking at "text" and "melody" as inseparable dimensions of the performance. Words might contain clues to the study of intonation and vice versa.

The pre-recording period

Before we started audio recordings, the collection of data limited itself to the written transcription of song texts (*ovi*) and information about performers and their villages. This information is the major part of the computer database that is being used for various queries. Texts were written down by social animators, both women and men belonging to the same communities as our informants, who quickly became experts in transcription and analytical works. This expertise had an important feedback on their social awareness and empowerment. In a group discussion (Pune, 5/10/99) Kusum Sonavne and Tara Ubhe declared: "Indeed, we started our movement with these songs because they were our only knowledge, but now we think about it and discover that these songs have multiple meanings…" This process of reappropriation and adaptation to new contexts of social communication (Rairkar 1997, Sonavne 1997, Ubhe 1997) is central to the animation work of Village Community Development Association (VCDA), a body coordinating several action groups in rural Maharashtra.

The classification of song texts revealed a remarkable stability of these texts, both in respect with the place and time of performance. It is not uncommon to find the same *ovi* (with slight syntactic variants) in villages at more than 200 kilometres distance, and some texts have been traced for intact transmission over several generations. This stability of the repertoire is surprising in two aspects: (1) its exclusively oral transmission; (2) the distance between "spoken text" (as transcribed) and "sung text" (performance).

When women stop singing and say the text to facilitate its transcription, it is clear from their recitation style that they own an autonomous knowledge of text, although they feel reluctant to detach it from the song performance. They are aware of reciting "songs", not "verse"… In other words, what we would call the "musical components", notably the tonal structure, are obliterated in this process. This is should not be disregarded as lack of expertise in music. For there remains an ontological question in the background: what is "music"? Notably when there is no audience and no awareness of its "performance"…

The analysis of recorded material

In 1996 we started recording entire performances of grindmill songs, taking advantage of digital audio tape (DAT) technology which offers a better sound quality and very useful indexing. The database of grindmill songs has been enhanced with information giving a quick access to the original sound track. In a near future, all recorded material will be stored on hard disks, using a compact format such as MP3, and directly accessed from the database.

As far as tonal classification is concerned, earlier work on the melodic transcription and analysis of North Indian classical music served little purpose. Mapping melodies to ragas for the sake of retrieving similar ones would not make more sense than using a foreign scale system. Many tunes,

for instance, have scale features akin to raga *Bhairavi* although they diverge in their melodic phrasing (*anga*) and emotional content.

Still, Indian musicology has more to offer than a scale system. The late Pt D.C. Vedi (1901-1993) suggested guidelines for a rational approach of the traditional raga system in North India (Van der Meer 1980). Characteristic features (*laksanas*) may be summarised as follows:

Time-independent criteria

1) Tonal structure: scale, consonance/dissonance, micro-intervals (*sruti*)
2) The relative occurrence frequencies of notes (*bahutva* and *alpatva* in a broad sense)

Time-dependent criteria

3) Notes more frequent in the beginning (*graha*) or in the end (*nyasa*) of phrases
4) The most frequent note on accentuated beats (*vadi*)
5) Short melodic patterns (*alankara*)
6) Characteristic melodic phrases (*tana*)

It is obvious that all the above criteria — except perhaps (5) — only apply to musical material consistent with an idea of tunefulness achieved by classical musicians at the cost of years of formal training. It does not make sense to speak about the relative occurrence of a note when that note cannot be identified! A typical example (also found in other popular traditions, e.g. North African) is a commonplace "confusion" of the minor and major third intervals above the tonic, namely 'Ga' and 'komal Ga' in *sargam* notation. Is it legitimate to name it a confusion, or is it just a case of ordinary variability that Western ears whose sense of modality has been reduced to perceiving the minor/major dichotomy tend to overestimate?

Even *alankara* create problems because in vocal classical music they are constructed on relatively stable tonal positions that may be recorded as "notes". Figure 1 displays a short phrase of raga Asha sung by a female performer and transcribed by Bel's melodic movement analyser (MMA). The Western staff notation and the "extended" *sargam* notation below it seem perfectly coherent with the detailed melodic line, so that "note treatment" may be conceptually distinguished from notes as such (Bor et al. 1985).

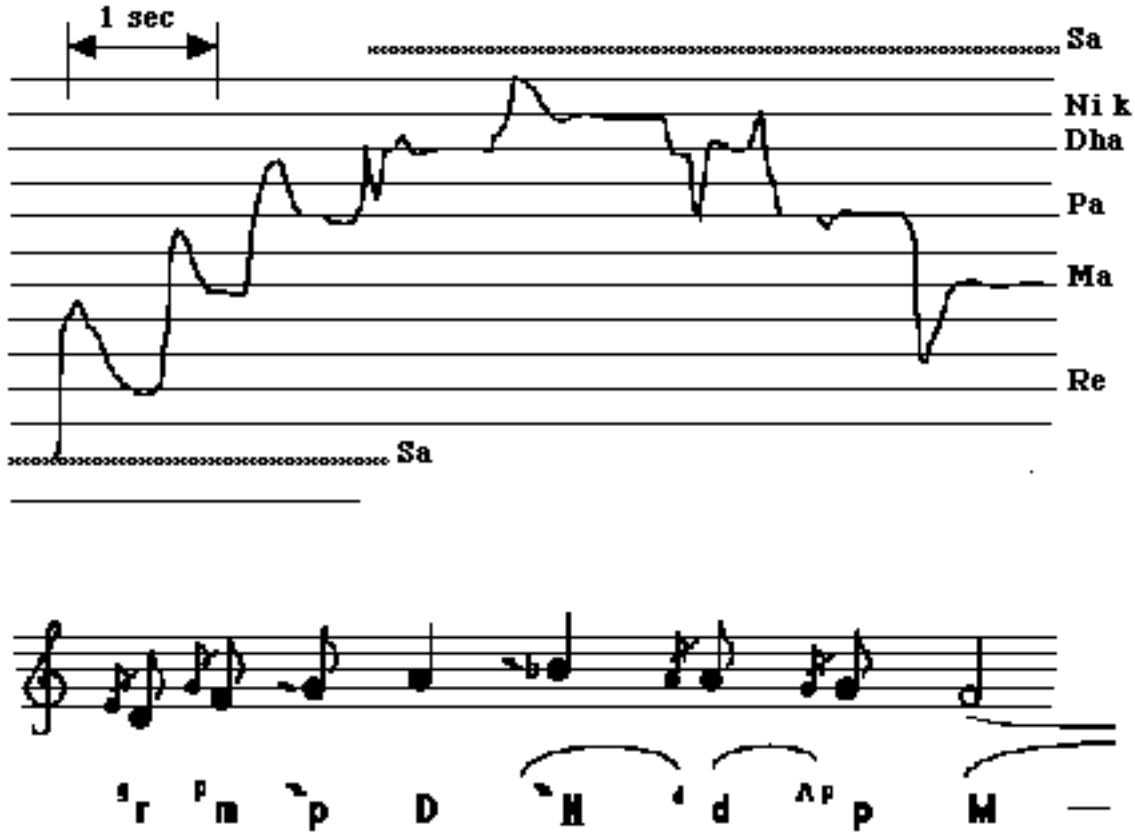

Fig. 1 Raga *Asha* sung in the North Indian classical musical style

The melodic material of performed grindmill songs is far from lending itself to this type of differentiation between notes and note treatment. Therefore, a better way to go might be to rely on the idea of "melodic phrasing" (*anga*), as it better reflects similarities between ragas that do not share the same scale structure, such as for instance *Todi* and *Bilaskani Todi*.

Veteran singers of grindmill songs seem to have developed vocal styles of their own reflecting personal concepts of "musicality". Women with a high social status often cultivate a voice culture and tunefulness that they perceive as characteristic of classical, *filmi* and temple music, whereas women of lower status are more inclined to assert a "personal commitment" to singing, thereby emphasising the strength and personality of their voices, *apparently* at the cost of tunefulness. The reality is much more complex because the same woman may not sing in the same style on her own and in unison with other performers. As a rule, group singing seems to be conducive to achieving the standard of records of popular songs, including *bhajan*, *gawalan* and grindmill songs, available in village shops and pilgrimage places.

Thus, we may expect to find several types of "signatures" in the corpus of recorded grindmill songs: collective signatures emphasising the performer's legitimate status as a member of a group (womanhood, village, cast…) and individual signatures reflecting a process of appropriation of the act of speaking/singing. Among explicit collective signatures comes the stereotyped utterance "I tell you, woman" defining a style of enunciation characteristic of the tradition of grindmill songs.

> It does not stand as an utterance for one's own sake, private benefit or solitary satisfaction. It is a human agency where speech as an act tends to establish an interpersonal relation, a binding rapport between subjects. The addressee is therefore called to grant an active welcome to the testimony of an addressor who speaks out towards somebody.
> (Poitevin & Rairkar 1996:256)

Developing new insights into the act of singing at the grindmill *as a communication process* implies elucidating the role of implicit signatures imbedded in each individual performance, notably the ones that we designated approximately as part of personal styles of singing. The background hypothesis of our research is that these personal styles might be the outcome of trade-offs between "music" and "language"; namely, the normative framework of a tune against the fluctuant manifestations of prosody in the subjective dimensions of speech communication. Further, the use of specific musical effects to elaborate discursive elements that may support, and sometimes contradict, the discursive content of the song lyrics.

In spontaneous speech, situations of communication that bear some resemblance with singing at the grindmill, both in terms of commitment of the speaker and the listener's adaptation to relaxed syntax, the main parameters manipulated for expressiveness are the ones belonging to the domain of speech prosody, both "lexical" (*word stress*, *tone* and *quantity*) and suprasegmental or "non-lexical" (*intonation proper*) (Hirst & Di Cristo, op.cit.: 5-ff).

If we were to define "melodic phrasing" (*anga*) in grindmill songs, we would therefore look for a combination of melodic and prosodic parameters. Indeed, these two notions borrowed from musicology and linguistics cover the same *physical* (acoustic) reality, namely time/pitch structures. However, the distinction makes sense at the *cognitive* (musicological/phonological) level. The bundling of these cognitive and physical aspects in either domain (musicology or linguistics) may be achieved by the common label "intonation system". The following broader definition of intonation holds true with music:

> On the physical level, intonation is used to refer to variations of one or more acoustic parameters. Of these, fundamental frequency (F0) is universally acknowledged to be the primary parameter. Many authors, however, have drawn attention to the pluriparametric nature of intonation which besides fundamental frequency involves variations of intensity and segmental duration (Rossi et al. 1981, Beckman 1986). Some authors in particular include under the term intonation aspects of temporal organisation or **rhythm** which besides intensity and duration may be reflected in variations of spectral characteristics such as for example distinctions between full and reduced vowels (Crystal 1969).
> (Hirst & Di Cristo, op.cit.:2)

Handling subjectivity in speech prosody

Intonation may be considered as a universal phenomenon with respect to languages and cultures since every language relies on an intonation system. Further, many of the linguistic and paralinguistic functions of intonations systems seem to be shared by languages of widely different origins, even though [...] *the specific features of a particular speaker's intonation system are also highly dependent on the language, the dialect, and even the style, the mood and the attitude of the speaker* (Hirst & Di Cristo, op.cit.:1).

Experiments have shown that the awareness of intonation is found in infants at an early age, as early as four days after birth — which suggests an acquisition during the last months of uterine life — and it is used by them to distinguish the prosody of their mother tongue from that of other languages (Mehler et. al. 1988). *The prosodic features of a language are not only probably the first phonetic features acquired by a child* […] *but also the last to be lost either through aphasia* […] *or during the acquisition of another language or dialect* […] (Hirst & Di Cristo, op.cit.:2).

These cognitive aspects of intonation lead us to believe that, in the absence of a formal musical training, performers of grindmill songs might rely on sophisticated expressive tools/strategies that have been transmitted to them at earlier stages of language acquisition. The same type of statement earlier worked as a fruitful hypothesis with respect to the acquisition of musical competence in traditional drumming (Kippen & Bel 1989).

The grounding hypotheses of our cognitive approach to speech prosody (Caelen-Haumont 2001) are the following:

1) the speaker needs to make the message *known* (both making it *heard* and *understood*),
2) the speaker needs to make the message *believed*,
3) to be believed, a message needs to carry a *subjective dimension*,
4) a great part of the subjective dimension lies in the F0 excursion within lexical items (and other related prosodic cues).

The permanence and redundancy of linguistic structures, on the one hand, and the strength of the situation which greatly contributes to reducing ambiguity, on the other hand, give the speaker a relative freedom to disrupt this linguistic framework. In fact phonemes are far from realising their canonical forms, various disfluencies break the 'right' (i.e. textual or academic) linguistic structure, and lexical prosody often disrupts the syntactic organisation. In spite of this, spontaneous speakers understand each other well, and often better than in the conventional speech of readers. Since the language model and structures may (or may not) be activated independently from the effective realisation of speech, speakers can 'appropriate' language forms at the acoustical, phonetic, prosodic, semantic, syntactic and/or emotional levels.

In dialogue conditions, it is observed that the form of speech is conditioned by the feedback about understanding or agreement that the speaker expects from the listener (Tomlin et. al. 1997). In the new exploration of this domain, some studies in prosody show that all these means of omissions, substitutions, repetitions, breaking and pauses, various noises and non-sense utterances, wide pitch excursions, supposedly disrupting the linguistic framework, lead on the contrary to better communication and interaction between speakers (Clark 1999, Fischer 1999, Jekat 1999), as they provide cues of synchronisation between speakers, and perhaps also facilitate automatic recognition and understanding (Gallwitz et. al. 1999).

Indeed, the choice of words, of phrase ordering, of sentence structures, i.e. the semantic and syntactic means, contribute in framing and casting the meaning in the most appropriate way. Still all the paralinguistic and

extralinguistic stuff is superimposed to clarify, clearly disambiguate, capture meaning in a subtle, personal way. This stuff is the matter of shared codes; however its use, occurrence and combination in the actual performance stand for an accurate and personal capture of sense.

Thus, this capture outlines a sort of subjective space whereby the only way to subjectively express meaning is to prosodically modify, release, or set *against* the well-framed organisation of linguistic units: for instance, using unexpected prominence with respect to the syntactic status of the word, or opposing a prosodic grouping (and/or pause) to the syntactic one...

As in other fields, in speech a person settles his/her identity by discarding common behaviour to some extent. A space remains free for each speaker, *given the linguistic rules and intonative background,* to disrupt and break down, (or conversely to support and even to focus) the syntactic links between units (Caelen-Haumont 1981, Zellner 1997). More precisely, this space is prosodically outlined by the F0 range within words (in fact $|\Delta F0|$ because in this space the relevant information lies in the difference between F0 maximum / minimum, not in the direction of the F0 slope), and associated cues such as F0 maximum, duration, and occasionally, intensity, pause, downstepping.

Figures 2-3 illustrate sudden rises of pitch associated with a speaker's expression of **irony**. The topic of this fragment of spontaneous speech is the renaming of a street, formerly "rue de Lyon", with a complicated foreign name, "rue Hiskovitch"… The speaker says: "They simplified [it], now it is called *la rue Hiskovitch*, with a 'h' in the beginning". Dotted lines indicate the intonation that would be expected by a normative semantic model based on the *support/apport* information structure (akin to topic/comment, see Caelen-Haumont 2000), and occasional syntactic features. A slight rise of pitch on the final syllable of "*simplifié*" (simplified) was expected. However, the actual augmentation of pitch (120 Hz) is significantly higher, a deviation that is interpreted as an ironical tone. In contrast, "Hiskovitch" is pronounced "flat" in spite of its syntactic border position and the amount of information that is conveyed by its strangeness and usefulness to the listener, all concurring to predict a higher pitch on the first syllable.

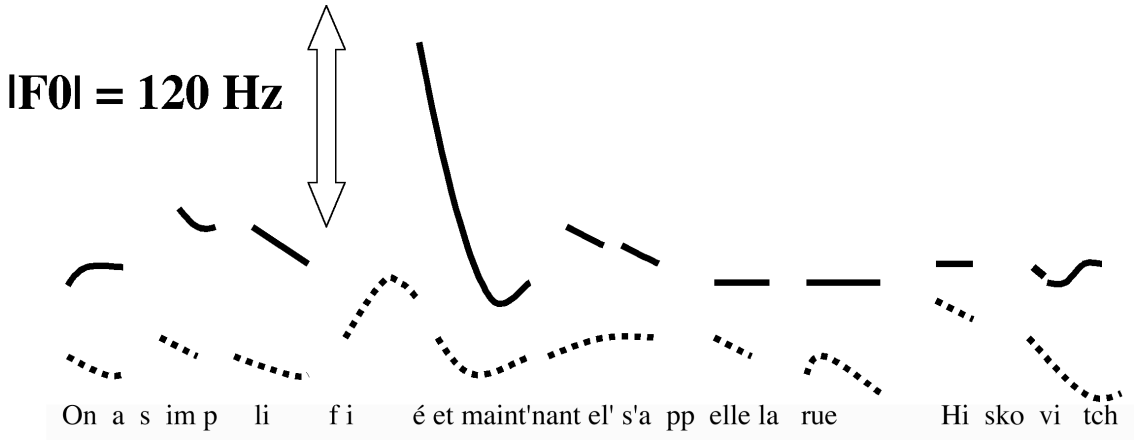

Fig. 2 "On a simplifié, et maintenant elle s'appelle la rue Hiskovitch…"

In the second part of the sentence (see fig. 3), "with a 'h' in the beginning", the ironical tone is rendered by putting an emphasis on metalinguistic

information — the proper spelling of "Hiskovitch" (phonetically "*hache*", i.e. 'h'). The pitch rise is even bigger (222 Hz) and the break is accentuated by a pause before the remaining part of the sentence "*au début*" (in the beginning).

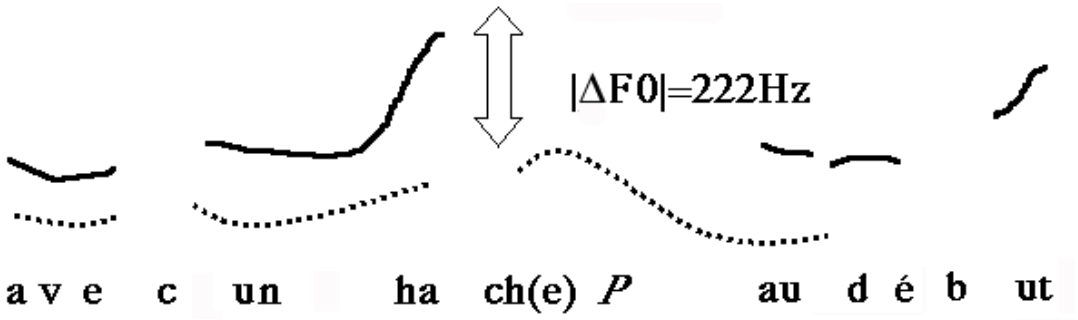

Fig. 3 "… avec un 'h' au début"

The intonation of grindmill songs

In the example shown fig. 2 and 3, the dotted pitch line is the one predicted with the aid of models of "conventional" intonation that take into account semantic and/or syntactic features. In sung poetry such as *ovi*, the syntactic structure is almost inexistent, as will be demonstrated *infra*. Therefore, the conventional tonal canvas is not a syntactic/semantic structure, it is the tune on which verses are sung.

Most performers of grindmill songs find it difficult to abstract tunes from the lyrics of songs when prompted to do so in group interviews. Besides, it is not common to hear women humming tunes when they try to remember songs. In most cases, the song is remembered as an integrated object, even though occasional adjustments of the tonic and melodic patterns may be witnessed during the first distichs. In 1997 we worked with a talented *sarangi* player trained in both classical and Punjabi folk styles. When confronted to the difficult task of interpreting grindmill song tunes on his sarangi, he would listen to the recordings and write down, not of the *sargam*, but of the phonemes he was able to capture! It was unexpected that a musician trained in V.N. Bhatkhande's system of music notation would try to memorise or conceptualise grindmill songs in terms of their textual, rather than tonal content, notably because he had no knowledge of Marathi language.

In analogy with speech intonation, we may expect that the rhetorical processes at work in this form of singing would be traceable in terms of "deviations from the tune". This poses a great difficulty, because tunes themselves are vaguely defined, and there is no reason to designate a musicological model (e.g. raga) and a normative concept of tunefulness (unavoidably that of "art music") as the reference. Should we for instance declare that singing *E flat* instead of *E* is a significant deviation (as the minor/major dichotomy would suggest), or, on the contrary, that both *E* and *E flat* are equivalent positions in the specific tonal space of a particular song? There is no direct answer to this dilemma since performers are not able to articulate their views on theoretical musical problems of this kind.

Still, there is no reason to be pessimistic if we only remember that "intonation", in this context, is not just a matter of tonal positions and scales — a controversial topic that pervaded Indian (ethno)musicology for a long

while (Bor 1988). Intonation comprises recurrent brief melodic patterns that may only be identified on visual transcriptions, akin to pitch rises and falls in speech prosody. Furthermore, intensity, spectral characteristics (e.g. variants of vowels) and the timing parameters (both segmental and suprasegmental) should be taken into account. These events may be correlated with the words or phrases they might be stressing, unstressing, and specific meanings they might convey in support to, or in contradiction with, the lyrics.

Since the syntactic structure is an almost neglectible feature of performed *ovi*, it is realistic to look at the order and positions of words as constituents of the time structure itself.

An essay in the interpretation of a performance

These phenomena will now be illustrated in a real performance. Some background information is necessary. This performance was selected for the type of tonal rendering that is common to many veteran singers of grindmill songs. It was sung on 5/03/1997 by Janire Shahu, a woman from the *Mahadev Koli* community in Rajmachi, a village near the Pune/Mumbai highway (UVS-28 in the corpus at CCRSS).

It is expected that the performer, who is acknowledged as a talented singer, will not try to achieve a stereotypical tonal structure. The second criterion was that the text of this particular performance displays a great continuity in the sequence of images and ideas.

Jhālī nā savasāñja divā lāvū Rāhībāī *Lakḷmībāī ālī puruṣācyā ḍāvyā pāyī*	It is twilight, Rahibai, put the lamp Lakshmibai has come through man's left leg
Jhālī nā ga savasāñja nako phiravū kerasuṇī *Bāī bāḷā nā ga yācyā mājhyā Lakṣmī jāīla phirunī*	It is twilight, do not sweep up the floor Woman, Lakshmi will go away from my son
Jāū rāhū karīla jāū rāhū *Sāṅgatē bāḷā tulā hilā gāyī gōṭhā dāvū*	Lakshmi shall wonder "Should I stay? Should I go?" I tell you, my son, show her the stable of the cows
Lakṣmībāī ālī culī bhānusī dētī citta *Sāṅgatē bāī tulā baghatī tujha mana*	Lakshmi has come, she gives heed to the hearth I tell you, woman, she examines your mind
Asturī puruṣācā yācā dōghācā ubhā dāvū *Lakṣmībāī ḃōla mī tara ugāca ālē dēvū*	Husband and wife, they are constantly quarelling Lakshmibai says: "My god! my coming is useless"

Lakṣmībāī ālī ga karītī pāṇī pāṇī *Dēvhāryācyā kōnā haṇḍa bharalānata dōnhī*	Lakshmibai has come, she asks for drinking water In the corner of the god's altar both the jars are full
Lakṣmībāī ālī tāka māgavī piyāyālu *Sāṅgatē bāḷā tulā ālī satava ghyāyālu*	Lakshmibai has come, she asks for buttermilk to drink I tell you, my son, she has come to test your *satva*[3]

Fig. 4 Full text on the theme "The coming of Lakshmi at twilight"

Suggestive expression

According to insiders' comments, the second verse "Lakshmibai has come through man's left leg" refers to the ritual way a couple enters the bridegroom's house, with the bride standing on the left side of her husband. Thus, the figure of woman-Lakshmi, which in peasant women imagination is associated with the evening, cows back in the stable, wealth in the farm, naturally triggers an evocation of successful marriage. Here, the evocation is not a plain metaphor or metonym; it belongs to the category of suggestive projection (*vyanjana*) if we follow the *rasa-dhvani* classification of expressive forms. With a sequence of only three words, *puruṣācyā ḍāvyā pāyī*, repeated twice in the actual performance, the singer unveils a very small fragment of a vast semantic framework that only experienced listeners are able to reconstruct with their own imagination (*kalpana*). This is a typical instance of a process that seems to be extensively at work in *ovi* as a poetical form.

The global timing structure

Fig. 5 illustrates the difference between the "text", as recited by performers and transcribed by social animators (in the rounded box on top), and the actual singing (the two lines below the box). The same verse is unfolded in two related occurrences. What is striking in the resulting structure is the treatment of the word *kerasuni*, the broom. The word is not pronounced in the first line. The truncation of the end of the sentence, altogether a breach of syntax and semantics, creates a strong expectation of the seme. We checked this with a group of women who, after hearing this isolated verse many times, would insist that they have heard the word *kerasuni* at the end.

[3] Satva : theoretically, the first of the three qualities constitutive of created beings, vz., that of excellence and goodness; according to Molesworth (1986 : 815), "the principle to which are referred light, truth, real being, wisdom, purity, piety, probity... , and all the virtuous and amiable sentiments and affections in animated beings."

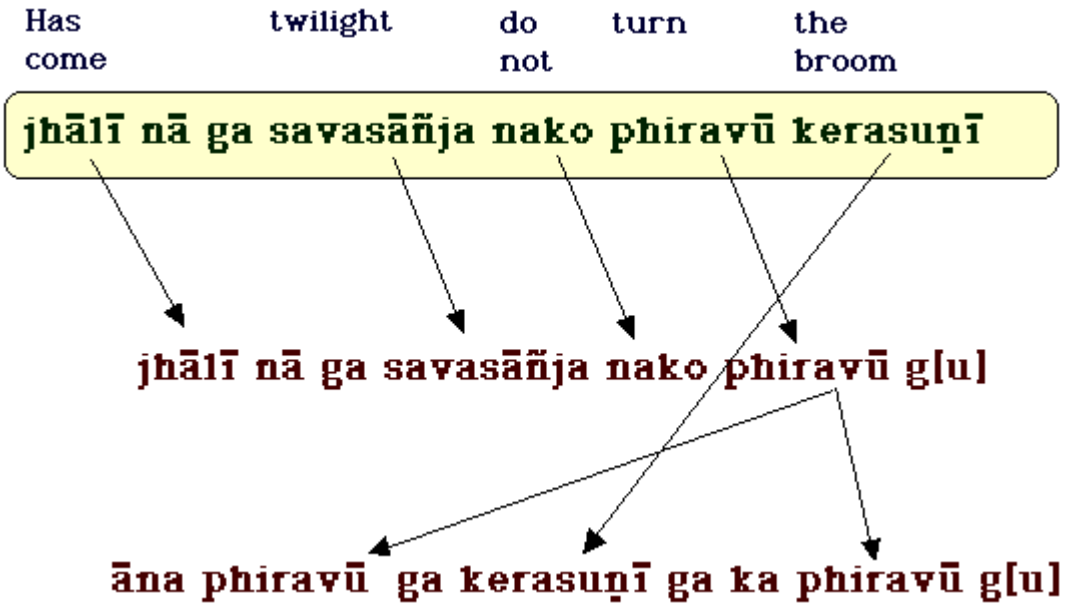

Fig. 5 The third verse: "It is twilight, do not sweep up the floor"

The emphasis on *kerasuni* is performed in an entirely opposite way in the next verse, as the word appears in a median position surrounded almost symmetrically by two occurrences of *phiravu*, another emblematic word as we will see in the following verses. (*a, na, ga, ka*, are "fillers" that convey a broad meaning of personal emotional commitment to the act of speaking/singing) In addition, this median position of *kerasuni* in the time structure (i.e., the tune) makes it eligible for the same type of melodic ornamentation that will be granted to *phiruni* in the fourth verse (see infra).

Why is this image of the broom given so much emphasis? The global meaning of this *ovi* is that the lady should not sweep the floor while she is waiting for Lakshmi because of the dust that might inadvertently spoil the visitor. Another idea that was suggested by our informants is that the house should not be too tidy as a mark of intensive activity, hence wealth… There is a metaphoric association between Lakshmi and the broom that remains to be checked with informants: in Fall, peasant women celebrate Lakshmi and buy plenty of brooms for this occasion. The broom itself may therefore convey a symbolic connotation of housework being essential in the production of wealth, thereby emphasising the central work of women. This may be put in contrast with songs evoking Ram, at sunrise, whose name is evocative of energetic daily moves, male precedence, need for brotherly companionship and guidance, sin, prayer and worship, all images which are absent from the scene of Lakshmi's visit.

Melodic/prosodic treatment

A finer analysis of the performance will now be demonstrated in the next two verses. Fig. 6 displays the sequence of words. Once again, the verse is split into two lines, with the first line exposing part of the argument. However, the second line is a noticeable expansion of a brief sequence of (again) three words, *Lakṣmī jāīlā phirunī*, with particular emphasis on *phiruni*.

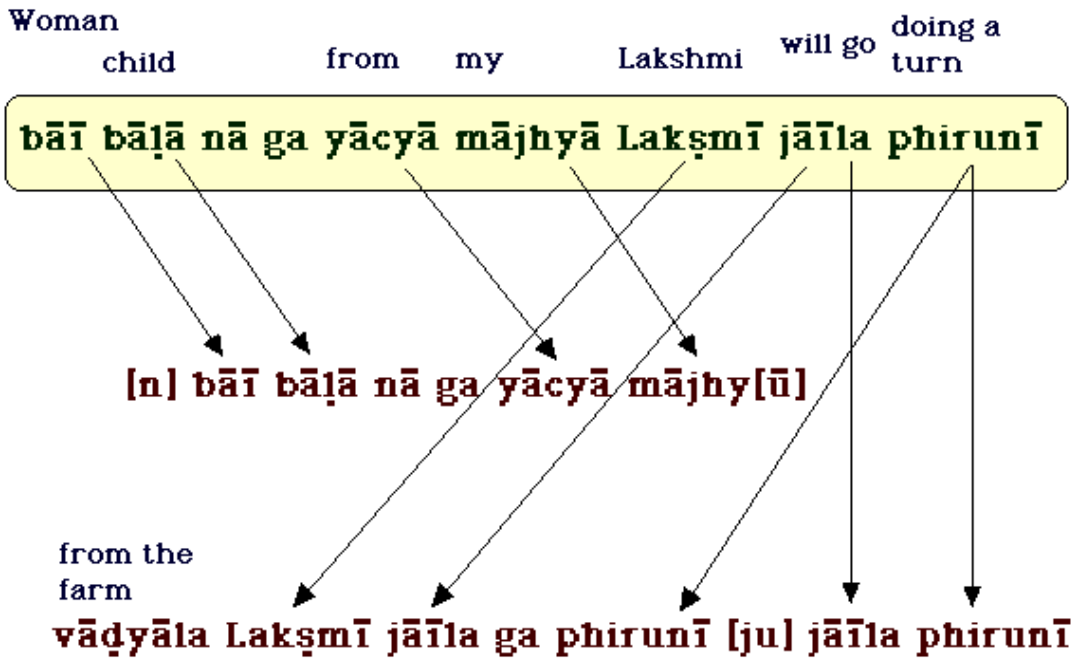

Fig. 6 The fourth verse: "Woman, Lakshmi will go away from my son"

The first line is both syntactically and semantically incomplete. It is completed (semantically) with the second line thanks to the word *vadyala* ("from the farm") that is unrelated with the rest of the sentence. In fact, this word is almost inaudible (not even transcribed in the recited text), rather it is guessed by informants as it makes sense of the preceding line. A conventional linguistic treatment would be to append *vadyala* at the end of the first line, but here the tune discards it to a meaningless position in the second line. The tune calls a long vowel at the end of the first line, here vowel /a/ rendered as /u/ as per the stylistic signature of the tribal community this singer belongs to.

The most surprising feature of this *ovi* is the emphasis on the word *phiruni*, a declined form of *phiravu* that also played an important role when "sweeping the floor" was rendered as "turning the broom". Thus, these two *ovi* construct a sort of cyclic referential evocation of three semes: Lashmi, "the broom" and "to turn".

The tonal structure

Even though Janire Shahu sings "out of tune" according to Western or classical Indian musical standards, a scale structure is recognisable by the ear and the tune may be reinterpreted on a melodic instrument such as the *sarangi*. A melodic transcription of the last verse is shown figure 7. The scale structure (as per equal-tempered intonation) is marked with horizontal lines.

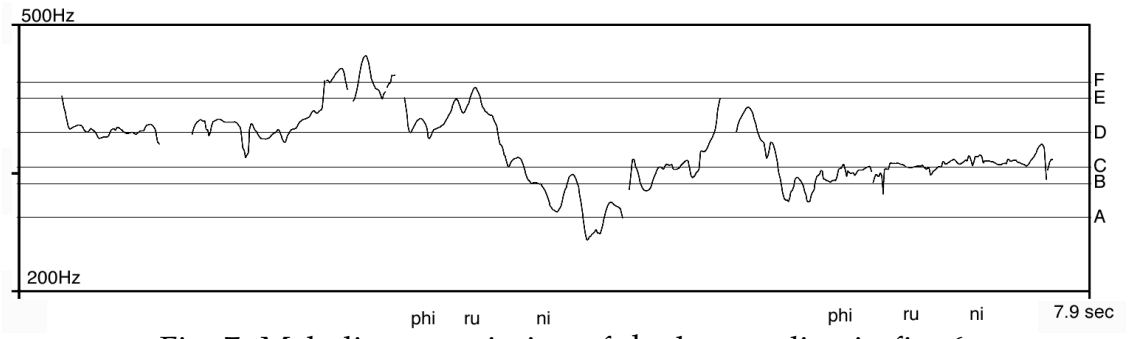

Fig. 7 Melodic transcription of the bottom line in fig. 6
(Extracted with *Praat*)

It is interesting to visually compare this transcription with that of raga Asha in classical music (fig. 1), as both are approximately identical in duration. In classical music we used to determine the scale via a selective histogram of tonal positions over the entire performance (a *tonagram*, see Arnold & Bel 1983). However, doing the same with grindmill songs would not produce significant results for two reasons: (1) performers are not tied to a precise tonal reference, unlike the ones who sing with *tanpura* or fixed-pitch instruments; (2) there are evidently very few sustained notes in grindmill songs, arguably because of prosodic features superimposed to the conventional musical structure.

The word *phiruni* is repeated twice in this bottom line (see fig. 6). As shown on fig. 7, the second occurrence is almost flat — a "conclusive" tone. In contrast, the first occurrence is melodically ornamented because of its median position in this part of the tune. The same ornamentation was used for *kerasuni* in the preceding *ovi*. A detail of this ornamentation is shown fig. 8.

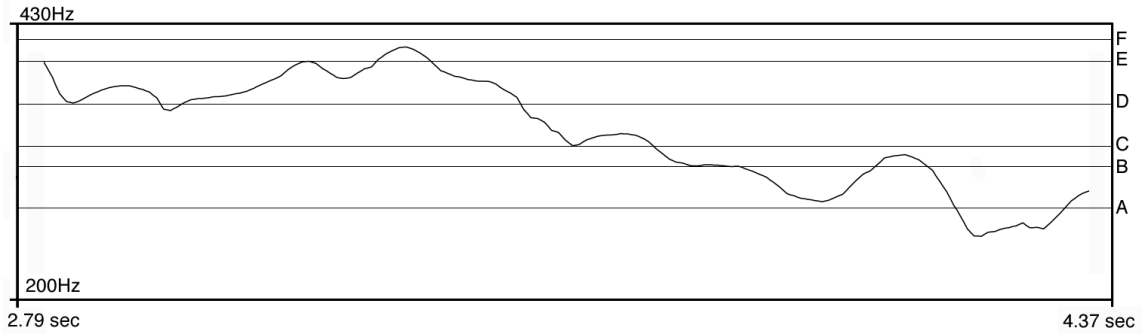

Fig. 8 Detail of median occurrence of "*phiruni*"

The striking feature of this ornamentation on *phiruni* is its complexity given the short duration (2.2 seconds) and the apparent global structure of the tune. The line does move across the tonal space, but it also catches the tonal positions that may be used to notate this movement:

D E (F) (E) (D) C B A (C) (A) (B)

Approximate matchings are marked between brackets. Given the speed of the performance, this melodic pattern is not less accurate than fast movements we earlier measured on performances of some of the most tuneful women singers (Kishori Amonkar, Sruti Salodikar…)

Conclusion

The analysis above should not be taken as a final statement. Rather it is a tentative description of phenomena recently observed thanks to the availability of accurate transcription tools, notably the multiplatform *Praat* software developed by Paul Boersma and David Weenink at the Institute of Phonetic Sciences of the University of Amsterdam, <http://www.fon.hum.uva.nl/praat/>.

At this stage of our research, it is important not to jump too quickly to conclusions. Eighteen years ago, after constructing the Melodic Movement Analyser (MMA) yielding the same type of accuracy on classical vocal and instrumental music, the analysis of a wide corpus of Indian classical music indicated that the modelling of scales and tuning schemes (*grama - sruti*) was more complex than expected after analysing a few typical performances on the *rudra vina* (Bel & Bor 1985).

In fact, the only value and motivation of this work is that it prompts new questions about the rhetoric of singing at the grindmill. These questions arise from the observation of almost unnoticeable aspects of the performance, for instance the emphasis put on certain words or phrases ("man's left leg", "don't turn the broom", "doing a turn"…) in which one may reach new layers of meanings not explicitly conveyed by the text. This is a domain of "hidden" (domestic) knowledge which feeds back new insights to our informants/analysts on their own culture.

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